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ABSTRACT

This study examined interaction between non-referential gesture and discourse-structuring linguistic devices in the development of metanarrative ability. Specifically, the development of the interaction between beat gestures and all metanarrative devices was analyzed in 9 children aged 5-6, 8-9, 11-12, and in 3 adults. Subjects viewed a cartoon and were videotaped recounting the story to listeners of the same age. Results showed that (1) adults produce metanarrative and narrative statements when telling a story, with the beat gestures accompanying metanarrative statements; (2) young children do not produce many metanarrative statements, but the percentage of metanarrative clauses in a story increases with age; (3) young children do produce as many beat gestures as adults, but they do not have the same distribution and do not occur primarily in metanarrative clauses; and (4) young children's beat gestures occur with time words. In conclusion, young children do provide structure, in their speech and gesture, in the stories they tell. This structure, however, exists as a comment on a lower level of organization; the level of links between individual events as opposed to global links between parts of the story seen as a whole. (MSE)

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THE DEVELOPMENT OF METANARRATIVE SPEECH AND GESTURE IN CHILDREN'S STORYTELLING

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ABSTRACT

This study examines the interaction between non-referential gesture and discourse-structuring linguistic devices in the development of metanarrative ability.

Adults use movement between narrative levels to structure storytelling. Adults also use temporal connectives and adverbs to convey the structure of the story they are telling, but these devices have been little investigated for their metanarrative function. Beat gestures accompany these meta-narrative clauses, signalling movement between narrative levels.

We looked at the development of the interaction between beat gestures and all metanarrative devices, in children aged 5-6, 8-9, 11-12 and adults.

Subjects saw a cartoon and were videotaped recounting the story to a naive same-age listener. Speech and gesture were transcribed and beat gestures and metanarrative speech were examined.

A significant correlation was found between age and the number of metanarrative statements produced. A U-shaped curve was found for the production of beat gestures. A significant correlation was found for the number of beats accompanying metanarrative statements; and a significant negative correlation was found between age and the number of beats marking temporal connecting phrases. That is, five year old children used beats to mark the structure of stories not in conjunction with metanarrative statements but with temporal structuring phrases.

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METHOD

Subjects:

3 adults and 9 children aged 5-6, 8-9, and 11-12 years saw a Sylvester and Tweetie Bird cartoon that lasted approximately six minutes. Each subject then recounted the story to a naive same-age listener.

Transcription:

Narrations were videotaped and the speech and gesture transcribed (reliability between two independent coders was between 75% and 90% for the various speech and gesture measures).

Coding:

Gestures were described and categorized as representational (iconic or metaphoric) or non-representational (beats or deictics). Production of deictics and metaphorics was inconsistent within age groups and so for the present study only iconics and beats were looked at.

Each speech clause was categorized as Narrative or Metanarrative (and as including a Repair, or Reported Speech, but these latter two categories were not interpreted for this paper). All temporal phrases (temporal connectives, adverbs, etc) were noted.

The co-occurrence of gesture categories with speech categories was established: a gesture was judged to be co-extensive with a temporal phrase if the preparation for the gesture began with that phrase and the hands relaxed with the end of the phrase (one word of leeway was allowed). All gestures carried out during a narrative or metanarrative clause were considered to be co-extensive with that clause.

-- **FIGURE 1** --

Adults don't just convey the plot of a story, they also tell something about the structure of the narration.

Statements having to do with the plot -- which move the story line forward -- are called **narrative statements**. Statements which provide structure -- such as a comment on the action, or overview of the story -- are called **metanarrative statements**. Examples of the latter are

I guess you never really know for sure he's gonna eat him
and
And that's the end of the stupid first part

Do young children produce these metanarrative statements?

The percentage of the total number of clauses that were metanarrative served as the measure of production.

Figure 1 shows the percentage of total clauses that were metanarrative for each of the four age groups.

Results:
The trend is for a steady increase with age in the number of metanarrative clauses produced.

At age 5, 19% of a story is comprised of metanarrative clauses. This increases to close to 30% for adults.

What kinds of gestures accompany metanarrative statements?

MetaNarrative Clauses

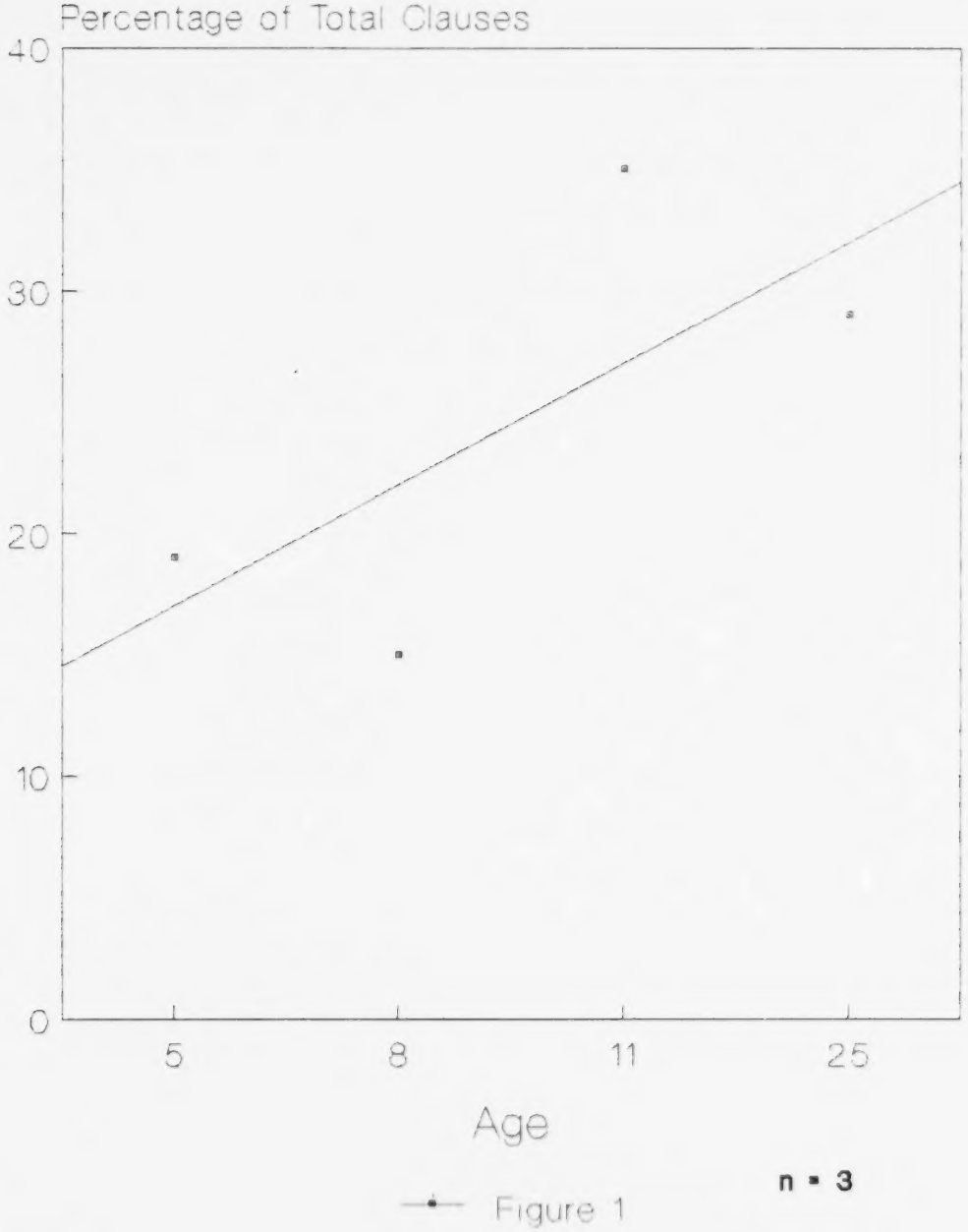


Figure 1

-- **FIGURE 2** --

Adults produce spontaneous gestures when they narrate stories.

Iconic gestures bear a formal similarity to some aspect of the situation described by the accompanying speech.

Iconics most often represent objects or actions, and are most often produced in conjunction with **narrative** statements.

Beat gestures are relaxed, formless waves of the hand that do not change with the content of the speech that they accompany.

Adults produce beats in conjunction with words or phrases to emphasize the role of these linguistic units as elements of the larger discourse. This means that they are often produced with **metanarrative** statements.

We know that very young children produce iconic gestures.
Do young children also produce metanarrative gestures -- that is, beats?

The percentage of total clauses containing beat gestures served as the measure of production of these metanarrative gestures.

Figure 2 shows the percentage of total clauses accompanied by beats for each of the four age groups.

Results:
The production of beats shows a U-shaped curve of development. That is, 25% to 32% clauses of the total clauses produced by 5-year-olds and adults are accompanied by beats. Only 11% of the total clauses produced by 8-year olds and 11-year olds are accompanied by beats.

It is striking that 5-year olds produce so many beats since Figure 1 demonstrates that they do not produce the metanarrative speech that usually accompanies beat gestures.

What kind of speech accompanies the beat gestures produced by five year old children?

Beat Gestures

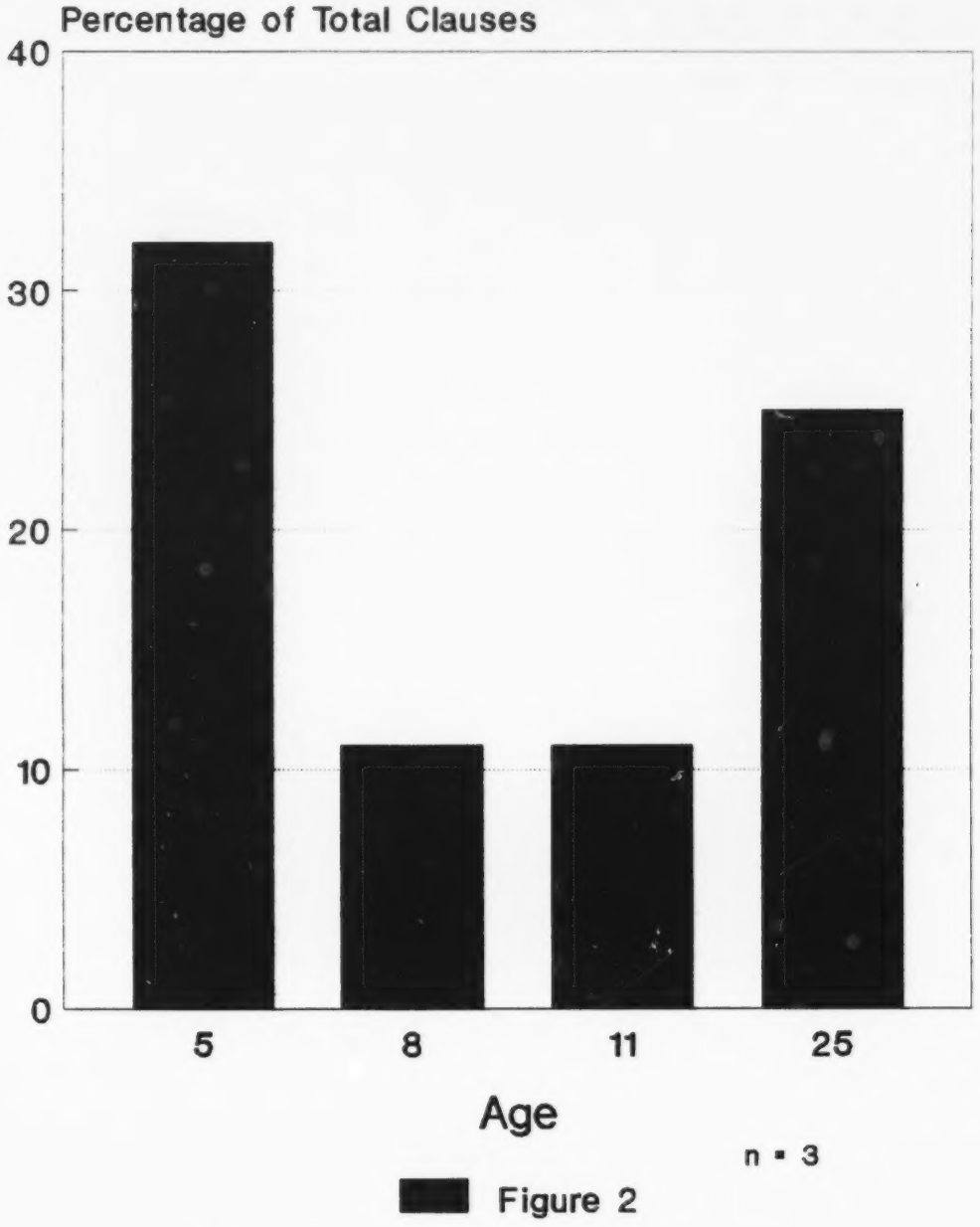


Figure 2

-- **FIGURE 3** --

Temporal adverbial phrases and conjunctions convey the relationships that hold between events in a story.

Temporal adverbial phrases may establish a point in time as relevant for subsequent action ("**One Sunday morning** Miles watered the grass"). They may indicate relationships of sequence and simultaneity between events ("**While** Sylvester was climbing up the pipe, Tweetie was getting a bowling ball" or "**and then** Granny saw him").

Time words, like metanarrative statements, convey the structure of a story. Metanarrative statements provide a structure for the story as a whole -- globally. Time words provide structure event-by-event -- at a local level.

Young children do not produce global-level metanarrative statements. We know that children do produce temporal conjunctions by a young age (sometimes linking every clause in a story with the temporal connective "**and then**").

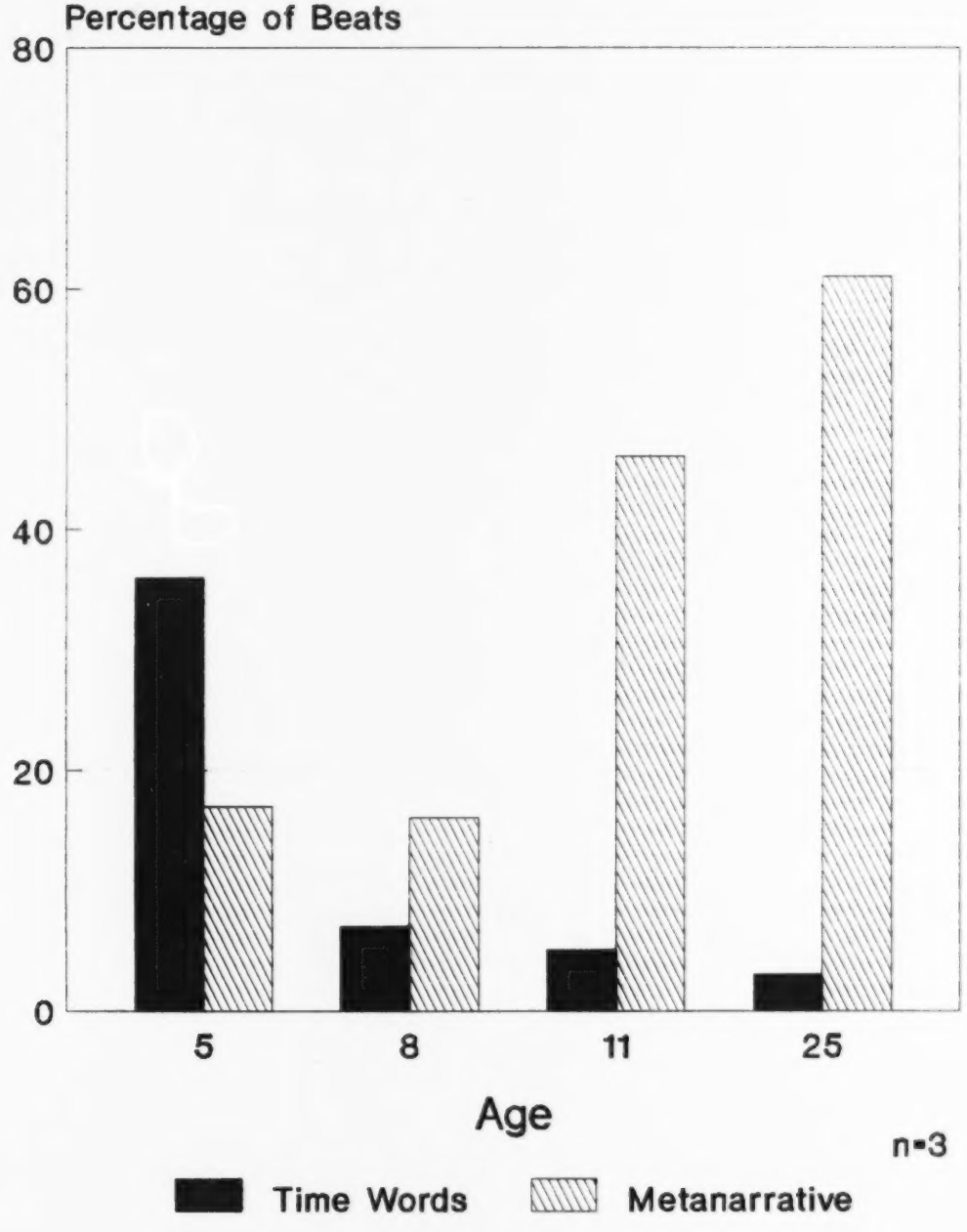
Do children produce metanarrative gestures in conjunction with these local-level metanarrative words and adverbial phrases?

Figure 3 shows the percentage of beats that accompany metanarrative statements versus the percentage of beats that accompany time words for each of the four age groups.

Results:

At age 5 the majority of beats are produced in conjunction with time words. This phenomenon tapers off and is replaced by the adult strategy of producing beats in conjunction with metanarrative statements.

Where Beats Occur



CONCLUSIONS

(1) Adults produce metanarrative and narrative statements when telling a story. Beat gestures accompany the metanarrative statements.

(2) Young children do not produce many metanarrative statements, but the percentage of metanarrative clauses in a story increases with age.

(3) Young children do produce as many beat gestures as adults do but their beat gestures do not have the same distribution -- they do not occur primarily with metanarrative clauses.

(4) Young children's beat gestures occur with time words. These temporal phrases also provide structure for a story but at a more local level.

Thus young children do provide structure, in their speech and their gesture, for the stories they tell . This structure, however, exists as a comment on a lower level of organization -- the level of links between individual events as opposed to global links between parts of the story seen as a whole.